

V.3.3-LIST-MSP MINNEAPOLIS API TABULATION OPERATION

Identifier: LIST-MSP

Application: All programs

The parameter input routine exists and the execution routine exists but is a dummy routine.

Description: This Operation tabulates time series and other information associated with an API type rainfall-runoff Operation.

It can be used with API-CIN, API-HAR, API-MKC or API-SLC Operations and it prints a summary of the results from API and associated snow model computations.

The time series values printed are:

- o 24 hour mean areal precipitation
- o 6 hour rain+melt
- o 6 hour runoff
- o 12Z water-equivalent
- o 12Z API value or storm API
- o 12Z AI value or storm AI/FI
- o 12Z AEI value (antecedent evaporation index)
- o 12Z areal extent of snow cover

Which of the 4 last values displayed depends on the API Operation being used.

Other information printed includes;

- o Segment identifier
- o runoff zone description
- o API Operation name and type
- o snow Operation name (if different from the API Operation)

Run time options allow data to be displayed for all days, all observed days, just today or today plus all future days; and for days with rain+melt greater than zero or just days with runoff greater than zero. Different options can be selected for observed than for future days.

Rain+melt and runoff can only be printed at 6 hour intervals.

Developed By: North Central River Forecast Center

Allowable Data Time Intervals: 6 hours

Time Series Used: Time series are obtained from the API and snow

Operations.

Input Summary: The card input for this Operation is as follows:

<u>Card</u>	<u>Format</u>	<u>Columns</u>	<u>Contents</u>
1	2A4	1-8	Type of API Operation ('API-CIN', 'API-HAR', 'API-MKC' or 'API-SLC'); enter 'NONE' if no API used (e.g. urban runoff zones)
	2X,2A4	11-18	Identifier of API Operation; defaults to the Segment identifier
	2X,2A4	21-28	Type of snow Operation used to compute rain+melt for the API Operation; defaults to SNOW-17; enter 'NONE' if no snow Operation used
	2X,2A4	31-38	Identifier of snow Operation; defaults to the API Operation identifier; if no API Operation defaults to the Segment identifier

The next field is needed only for the Calibration System programs:

	2X,A4	41-44	Display control: 'ALL ' = display all days 'RAIM' = display all days with rain+melt greater than zero (default) 'INFW' = display all days with runoff greater than zero
	2X,2A4	11-18	Identifier of API Operation; defaults to the Segment identifier

Sample Input and Output: Sample input is shown in Figure 1. Sample output from the parameter print routine is shown in Figure 2. Sample output from the execution routine is shown in Figure 3.

Error and Warning Messages: The error and warning messages generated by this Operation and the corrective action to take when they occur are as follows:

A. Messages that can occur during setup:

1. ****ERROR**** OPERATION(TYPE=XXXXXXXX NAME=XXXXXXXX) DOES NOT EXIST PREVIOUSLY IN THIS SEGMENT.

Action: Move the snow and/or API Operations to before the LIST-MSP Operation.

2. **ERROR** THE API MODEL RAIN+MELT TIME INTERVAL MUST EQUAL
6. XXXXXXXX XXXXXXXX USES A TIME INTERVAL OF XX

Action: Change the time interval of the API Operation.

Carryover Transfer Rules: This Operation has no carryover.

Punched Card Limitations: None

Figure 1. Sample Card Input For Operation LIST-MSP

```
          - Column -  
         5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80  
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
LIST-MSP  AFTNC
```

Figure 2. Sample Output From Operation LIST-MSP Print Parameter Routine

```
*****  
LIST-MSP OPERATION      NAME=AFTNC      PREVIOUS NAME=  
*****  
  
      RUNOFF/SNOW TABULATION FOR PECATONICA AFTON  
      API OPERATION      API-MKC      AFTNC  
      SNOW OPERATION      SNOW-17      AFTNC
```

Figure 3. Sample Output From Operation LIST-MSP Execution Routine

(no output is currently printed by the execution routine)